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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/864,107
Filing Date: May 24, 2001
Appellant(s): VAN LIERE, FILIPS

Sonia K. Guterman and Adam M. Schoen
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 6/8/2007 appealing from the Office Actions mailed 1/23/2007 and 4/3/2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,740,267	Echerer et al.	4-1998
5,454,371	Fenster et al.	10-1995
6,081,267	Stockham et al.	6-2000

5,798,752	Buxton	8-1998
6,424,996	Killcommons et al.	7-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-3, 5-12, 14-19, 26-30 and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Echerer et al. U.S. Pat. No. 5,740,267 (hereinafter Echerer) in view of Fenster et al. U.S. Pat. No. 5,454,371 (hereinafter Fenster), Stockham et al. U.S. Pat. No. 6,081,267 (hereinafter Stockham) and Buxton et al. U.S. Patent No. 5,798,752 (hereinafter Buxton).

3. Re Claim 1:

Echerer teaches a method for providing and processing a cursored user interaction (column 8, lines 37-67, column 9, lines 1-23) with a spatially displayed medical image (column 7, lines 21-29) and producing graphics related data on said medical image (column 12, lines 42-56), wherein said method comprises the steps of:

Controlling a mouse computer interface device, having at least one button (e.g., column 12, lines 20-30; column 13, lines 25-50);

Displaying a pointer symbol on said graphical interface, wherein said pointer symbol (e.g., a cursor) represents a current position of said mouse on said graphical interface (e.g., column 8, lines 35-55; column 12, lines 20-30; column 13, lines 25-50);

Tracking a status of each of said at least one button (e.g., column 12, lines 20-30; column 13, lines 25-50);

Detecting a position of said mouse, wherein said position detection step is activated upon actuation of one of said at least one button (e.g., column 12, lines 20-30; column 13, lines 25-50; column 15, lines 15-35); and

Generating one of a plurality of measurement graphics related to a predefined set of measurement operations on said medical image upon at least one actuation of said at least one button, wherein one of the measurement graphics is an angle value quantity (*herein only mouse is being used instead of the user interface constructs such as ACTION BARS or SCROLLABLE PANEL AREAS; see e.g., column 12, lines 20-30; column 13, lines 25-50; column 15, lines 15-35; Echerer teaches measuring the length of the two points, measuring an area encircled by at least three points and measuring the angle between two lines formed by four points wherein the four points are specified as in column 21 for measuring the angle*).

Enabling the generation of the plurality of at least three different measurement graphics using said mouse without activation of toolbars and control panels such that the measurement graphics are generated without movement of said pointer symbol outside of said medical image (*e.g., column 10, lines 1-10 wherein Echerer discloses an embodiment employing dual monitors*

wherein the image is displayed solely on one monitor without toolbars and menus being displayed on the same monitor and the measurement graphics is thus generated using the mouse/pointer without activation of toolbars and control panels.. See also column 12, lines 20-30; column 13, lines 25-50; column 15, lines 15-35), and

Enabling the generation of the at least three measurement graphics without requiring a user to define in advance the type of measurement graphics being generated (*e.g., column 12, lines 20-30; column 13, lines 25-50; column 15, lines 15-35*).

In other words, Echerer further discloses enabling the generation of the measurement graphics without activation of ACTION BARS or image fields, OR CONTROL PANELS since Echerer teaches using a mouse only without activating ACTION BARS or image fields, OR CONTROL PANELS. See e.g., column 12, lines 20-30; column 13, lines 25-50; column 15, lines 15-35. Echerer teaches measuring the length of the two points, measuring an area encircled by at least three points and measuring the angle between two lines formed by four points wherein the four points are specified as in column 21 for measuring the angle. Echerer discloses enabling the generation of the measurement graphics without requiring a user to define a type of graphic being generated using the mouse or through the automatic analysis file wherein the measurement graphics is automatically generated. See column 17-18 wherein Echerer teaches using the pointer device to place points and identify the measurement graphic and thus enabling the generation of the measurement graphics without requiring a user to define a type of graphic being generated.

Fenster discloses that the user can use the graphical input device such as a single button mouse to measure distances and areas of the three-dimensional image within the most recently

moved image plane and the user simply needs to use the graphical input device 38 to indicate the two end points over which the distance is to be measured if the user wishes to measure a distance and the user must identify at least three points if an area is to be measured and the placement of points on the image is done by moving a cursor and the display module 92 connects adjacent points by straight line segments and computes both the overall line length and the area bounded by the lines joining the points using an appropriate scale. **In this setting, only a mouse has been placed on the points of the image to measure a distance or an area without activation of menus, toolbars and control panels outside the medical image**. For the reasons discussed above, Fenster teaching using the pointer device to place points and identify the measurement graphic and thus enabling the generation of the measurement graphics without requiring a user to define a type of graphic being generated

When the pointer symbol is situated on the medical image, a measurement graphics is generated without actuation of one button of the mouse on menus, toolbars and control panels because the pointer symbol is situated on the medical image while the measurement graphics is generated. The pointer symbol is not situated on menus, toolbars and control panels when the pointer symbol is situated on the medical image. Therefore, the actuation of the at least one button of the mouse enables the generation of the plurality of different measurement graphics including measuring the distance of two points on the medical image and the area encircled by three points on the medical image without actuating at least a button of the mouse when the pointer symbol of the mouse is situated on menus, toolbars and control panels, i.e., when the pointer symbol is subsequently moved away from the medical image after the generation of the measurement graphics. Fenster discloses enabling the generation of the plurality of different

measurement graphics including the measurement of distance between two points on the medical image and the measurement of area encircled by more than two points on the medical image based only upon actuation of at least one button of said mouse when said pointer symbol is situated on said medical image without clicking on the mouse, even when the pointer symbol is moved outside the medical image and placed on the menus, toolbars, and control panels outside the medical image after the measurement graphics is generated. Fenster discloses enabling the generation of the plurality of different measurement graphics including the measurement of distance between two points on the medical image and the measurement of area encircled by more than two points on the medical image based only upon actuation of at least one button of said mouse when said pointer symbol is situated on said medical image without the actuation of the at least one button of the mouse when said pointer symbol is subsequently moved away from the medical image and placed on menus, toolbars, and control panels. Because the pointer symbol is placed on the medical image in the generation of the measurement graphics, the measurement graphics are generated without the movement of the pointer symbol outside of the medical image while the measurement graphics is generated. In conclusion, Fenster discloses the claim limitation of enabling the generation of the plurality of different measurement graphics based only upon actuation of said at least one button of said mouse when said pointer symbol is situated on said medical image without actuation of said at least one button of said mouse when said pointer symbol is situated on menus, toolbars, and control panels such that the measurement graphics are generated without movement of said pointer symbol outside of said medical image.

According to MPEP 2106, Office personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris, 127 F.3d 1048, 1054-55,*

44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. *E-Pass Techs., Inc. v. 3Com Corp., 343 F.3d 1364, 1369, 67 USPQ2d 1947, 1950 (Fed. Cir. 2003)* (claims must be interpreted 'in view of the specification' without importing limitations from the specification into the claims unnecessarily).*In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969). See also In re Zletz, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989).*

It needs to be shown whether Echerer explicitly disclose the claim limitation, "displaying...said medical image...without the presence of menus, toolbars and control panels on said graphical interface". Echerer at least implicitly teaches or suggests the claim limitation. This is because Echerer teaches in column 10, lines 1-10 displaying an image solely in one monitor without the presence of menus, toolbars and control panels on said graphical interface on the same monitor because buttons, slides and adjustment tools are displayed on another monitor, or an external monitor that has nothing to do with the monitor displaying the image and the graphical interface.

It needs to be shown whether Echerer explicitly disclose the claim limitation, "enabling the generation of the at least three measurement graphics without requiring a user to define in advance the type of measurement graphic being generated". Echerer's generation of the at least three different measurement graphics is performed at least through the automatic analysis file without requiring a user clicking on the menus, toolbars and control menus to define in advance the type of measurement graphic being generated. Moreover, Echerer teaches using the pointer device to place points and identify the measurement graphic and thus enabling the generation of

the measurement graphics without requiring a user to define a type of graphic being generated. Accordingly to applicant's specification, it is understood that only one measurement graphic is produced at a time and the type of measurement graphic should be defined through the mouse operator interface. However, applicant's claim 1 set forth the claim limitation of "enabling the generation of the at least three measurement graphics without requiring a user to define in advance the type of measurement graphic being generated."

Fenster teaches the claim limitation of "displaying...said medical image...without the presence of menus, toolbars and control panels on said graphical interface" (*Fenster discloses in column 23, lines 25-40 and Fig. 27 using the graphical input device to measure distances and areas of the three-dimensional image within the most recently moved plane without the presence of menus, toolbars and control panels on said graphical interface. Fenster teaches that the user uses the graphical input device to indicate the two end points over which the distance is to be measured and the user must identify at least three points if an area is to be measured. Fenster also teaches generating the measurement graphics without moving the pointer outside the medical image*).

It would have been obvious to one of ordinary skill in the art to have incorporated the Fenster's measurement method into Echerer's method of processing cursored user interaction because Echerer implicitly suggests providing a menu-less graphical interface for display said medical image (*Echerer column 10, lines 1-10 wherein the image is solely displayed in a monitor without menus, toolbars and control panels while being manipulated by the pointing device of column 17-18*) because Echerer's medical image is not covered by the menus, toolbars and

control panels (e.g., Echerer column 12, lines 20-30; column 13, lines 25-50) and providing a predefined interaction with said medical image, wherein said interaction is selected from a group of predefined interactions based on said status of each of said at least one button during the interval between multiple said position detection steps (e.g., Echerer column 16, lines 15-67; column 17, lines 1-67; column 18, lines 1-64) therefore suggesting an obvious modification of the Echerer's method for processing a radiograph.

One having the ordinary skill in the art would have been motivated to do this because it would have provided an alternative drawing option that does not rely on the menus, control panels and toolbars for GUI control (Fenster column 23 and Fig. 27).

It needs to be shown whether Echerer and Fenster explicitly teach the claim limitation, "enabling the generation of the at least three measurement graphics without requiring a user to define in advance the type of measurement graphic being generated".

Fenster discloses enabling the generation of at least two different measurement graphics based only upon the actuation of the at least one button of the mouse, Stockham discloses enabling the generation of at least three different measurement graphics based only upon the actuation of the at least one button of the mouse. Stockham discloses providing the angle measurement without the presence of the menus, toolbars and control panels on the medical image (See column 3, lines 40-45) and measuring the linear distance, angle, rectangular ROI, elliptical ROI etc (column 6, lines 1-5) and thereby Stockham discloses enabling the generation of the at least three measurement graphics without requiring a user to define in advance the type of measurement graphic being generated. Therefore, having the combined teaching of Echerer, Fenster and Stockham, one of the ordinary skill in the art realize how to generate at least three

different measurement graphics based only upon the actuation of the at least one button of the mouse. Moreover, Echerer discloses enabling the generation of at least three different measurement graphics without requiring a user to define a type of graphic being generated through the automatic analysis file wherein the measurement graphics is automatically generated (See column 17-18). Echerer's generation of the at least three different measurement graphics is enabled without moving the cursor outside the medical image, i.e., through the automatic analysis file. Therefore, Echerer suggests the claim limitation of "enabling the generation of at least three different measurement graphics based only upon actuation of said at least one button of said mouse when said pointer symbol is situated on said medical image such that the measurement graphics are generated without movement of said pointer symbol outside of said medical image." Echerer's generation of the at least three different measurement graphics is performed through the automatic analysis file without requiring a user clicking on the menus, toolbars and control menus to define in advance the type of measurement graphic being generated. Accordingly to applicant's specification, it is understood that only one measurement graphics is produced at a time and the type of measurement graphics should be defined through the mouse operator interface. However, applicant's claim 1 set forth the claim limitation of "enabling the generation of the at least three measurement graphics without requiring a user to define in advance the type of measurement graphic being generated."

One having the ordinary skill in the art would have been motivated to do this because it would have provided an alternative drawing option that does not rely on the menus, control panels and toolbars for GUI control (Fenster column 23 and Fig. 27; Stockham column 6, lines 1-5 and Figs. 1a-3c).

However, it is not clear that Echerer, Fenster and Stockham expressly disclose the "triple-point actuating/positioning".

Buxton discloses the claim limitation of "triple-point actuation/positioning" (Buxton column 19, lines 55-67). Buxton discloses measuring the lengths, slopes and coordinates and slopes using the button tool and measuring the angle of the tripe points clicked wherein the angle is related to the middle point of the last three point clicked (See Buxton column 19, lines 55-67).

It would have been obvious to have incorporated Buxton's triple-point actuation/positioning into Echerer, Fenster and Stockham's method because **Echerer suggests the claim limitation by disclosing measuring the angle between two lines formed by four points wherein the four points are specified as in column 21 for measuring the angle. The example shows that the four points may be distinct from each other. However, one of the ordinary recognizes that the four points may include two identical points resulting in a three distinct points that is the same as what being claimed, i.e., the three point actuating/positioning by the user through an automatic analysis file specification of the three points for measuring an angle of the two rays formed by the three points or four points with two identical points. Therefore, Echerer suggests the claim limitation of "triple-point actuation/positioning"**.

Moreover, Echerer discloses enabling the generation of the measurement graphics without requiring a user to define a type of graphic being generated or without requiring a user specifying the type of graphic being generated using the menus through the automatic analysis file wherein the measurement graphics is automatically generated (See column 17-18).

Therefore, having the combined teaching of Echerer, Fenster, Stockham and Buxton, one of the ordinary skill in the art would have been motivated to measure the angle associated with three points as clicked by the user using the mouse because this allows the use of a click-through button tool that measures geometric properties (Buxton column 19, lines 55-67).

Claim 2:

The claim 2 encompasses the same scope of invention as that of claim 1 except additional claimed limitation that a single-point actuating/positioning assigns an actual pixel position and/or a pixel intensity quantity to the point in question. However, Echerer and Fenster further disclose the claimed limitation that a single-point actuating/positioning assigns an actual pixel position and/or a pixel intensity quantity to the point in question (e.g., Echerer column 12, lines 42-56; Fenster column 19).

Claim 3:

The claim 3 encompasses the same scope of invention as that of claim 1 except additional claimed limitation that a point pair actuating/positioning assigns a distance value to the pair in question. However, Echerer further discloses the claimed limitation that a point pair actuating/positioning assigns a distance value to the pair in question (e.g., column 13, lines 12-49, column 15, lines 9-11).

Claim 5:

The claim 5 encompasses the same scope of invention as that of claim 1 except additional claimed limitation that "multiple-point actuating/positioning for an open or closed point

sequence assigns an area value quantity to a concave region delimited by the sequence in question". However, Fenster further discloses the claim limitation of multiple-point actuating/positioning for an open or closed point sequence assigns an area value quantity to a concave region delimited by the sequence in question (*This is because Fenster discloses in column 19 and 4 that the user can use the graphical input device 38 such as a single button mouse to measure distances and areas of the three-dimensional image within the most recently moved image plane and the user simply needs to use the graphical input device 38 to indicate the two end points over which the distance is to be measured if the user wishes to measure a distance and the user must identify at least three points if an area is to be measured and the placement of points on the image is done by moving a cursor and the display module 92 connects adjacent points by straight line segments and computes both the overall line length and the area bounded by the lines joining the points using an appropriate scale*).

Claim 6:

The claim 6 encompasses the same scope of invention as that of claim 1 except additional claimed limitation that "a freehand-drawn actuating/positioning for an open or closed point sequence assigns an area value quantity to a concave region delimited by the sequence in question". However, Fenster further discloses the claim limitation of a freehand-drawn actuating/positioning for an open or closed point sequence assigns an area value quantity to a concave region delimited by the sequence in question (*This is because Fenster discloses in column 19 and 4 that the user can use the graphical input device 38 such as a single button mouse to measure distances and areas of the three-dimensional image within the most recently*

moved image plane and the user simply needs to use the graphical input device 38 to indicate the two end points over which the distance is to be measured if the user wishes to measure a distance and the user must identify at least three points if an area is to be measured and the placement of points on the image is done by moving a cursor and the display module 92 connects adjacent points by straight line segments and computes both the overall line length and the area bounded by the lines joining the points using an appropriate scale).

Claim 7:

The claim 7 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of "a multiple-point actuating/positioning for an open or closed point sequence assigns a poly-line measurement quantity to the sequence so drawn". However, Fenster further discloses the claim limitation of a multiple-point actuating/positioning for an open or closed point sequence assigns a poly-line measurement quantity to the sequence so drawn (*This is because Fenster discloses in column 19 and 4 that the user can use the graphical input device 38 such as a single button mouse to measure distances and areas of the three-dimensional image within the most recently moved image plane and the user simply needs to use the graphical input device 38 to indicate the two end points over which the distance is to be measured if the user wishes to measure a distance and the user must identify at least three points if an area is to be measured and the placement of points on the image is done by moving a cursor and the display module 92 connects adjacent points by straight line segments and computes both the overall line length and the area bounded by the lines joining the points using an appropriate scale*).

Claim 8:

The claim 8 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of "for an open or closed point sequence assigns a poly-line measurement quantity to the sequence so drawn". However, Fenster further discloses the claim limitation of a freehand-drawn actuating/positioning for an open or closed point sequence assigns a poly-line measurement quantity to the sequence so drawn (*This is because Fenster discloses in column 19 and 4 that the user can use the graphical input device 38 such as a single button mouse to measure distances and areas of the three-dimensional image within the most recently moved image plane and the user simply needs to use the graphical input device 38 to indicate the two end points over which the distance is to be measured if the user wishes to measure a distance and the user must identify at least three points if an area is to be measured and the placement of points on the image is done by moving a cursor and the display module 92 connects adjacent points by straight line segments and computes both the overall line length and the area bounded by the lines joining the points using an appropriate scale*).

Claim 9:

The claim 9 encompasses the same scope of invention as that of Claim 2

except additional claimed limitation of assigning a pixel staticizing to an assigned geometrical entity. However, Echerer further discloses the claimed limitation of assigning a pixel staticizing to an assigned geometrical entity (column 9, lines 1-23, column 15, lines 9-11).

Claims 10-12:

The claim 10, 11, 12 encompasses the same scope of invention as that of claim 1, 2, 3 respectively except additional claimed limitation of "an apparatus". However, Echerer further discloses the claimed limitation of "an apparatus" (column 5, lines 12-37).

Claims 14-18:

The claim 14, 15, 16, 17, 18 encompasses the same scope of invention as that of claim 5, 6, 7, 8, 9 except additional claimed limitation of "an apparatus". However, Echerer further discloses the claimed limitation of "an apparatus" (column 5, lines 12-37).

Claim 19:

The claim 19 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of a machine-readable computer program. However, Echerer further discloses the claimed limitation of "a machine-readable computer program (column 9, lines 30-36, figures 6-9).

Re Claims 26 and 32:

Echerer discloses enabling the generation of at least three different measurement graphics without requiring a user to define a type of graphic being generated through the automatic analysis file wherein the measurement graphics is automatically generated (See column 17-18). Echerer's generation of the at least three different measurement graphics is enabled without moving the cursor outside the medical image, i.e., through the automatic analysis file. Echerer thus discloses the at least three measurement graphics including a distance measurement between

two points, an angle measurement between two lines and an area measurement formed by at least three points. Stockham discloses providing the angle measurement without the presence of the menus, toolbars and control panels on the medical image (See column 3, lines 40-45) and measuring the linear distance, angle, rectangular ROI, elliptical ROI etc (column 6, lines 1-5) and thereby Stockham discloses enabling the generation of the at least three measurement graphics without requiring a user to define in advance the type of measurement graphic being generated.

Re Claims 27 and 33:

Echerer discloses enabling the generation of at least three different measurement graphics without requiring a user to define a type of graphic being generated through the automatic analysis file wherein the measurement graphics is automatically generated (See column 17-18). Echerer's generation of the at least three different measurement graphics is enabled without placing the cursor on the menus, toolbars and control panels.

Fenster discloses in column 23, lines 25-40 and Fig. 27 using the graphical input device to measure distances and areas of the three-dimensional image within the most recently moved plane without the presence of menus, toolbars and control panels on said graphical interface. Fenster teaches that the user uses the graphical input device to indicate the two end points over which the distance is to be measured and the user must identify at least three points if an area is to be measured. Fenster also teaches generating the measurement graphics without moving the pointer outside the medical image.

Stockham discloses providing the angle measurement without the presence of the menus, toolbars and control panels on the medical image (See column 3, lines 40-45) and measuring the

linear distance, angle, rectangular ROI, elliptical ROI etc (column 6, lines 1-5) and thereby Stockham discloses enabling the generation of the at least three measurement graphics without requiring a user to define in advance the type of measurement graphic being generated.

Claim 28:

Although Echerer is silent to the claim limitation of determining which of the at least three measurement graphics is generated based on the number of points selected upon actuation of said at least one button of said mouse, Fenster and Stockham teach the claim limitation.

Fenster discloses in column 23, lines 25-40 and Fig. 27 using the graphical input device to measure distances and areas of the three-dimensional image within the most recently moved plane without the presence of menus, toolbars and control panels on said graphical interface. Fenster teaches that the user uses the graphical input device to indicate the two end points over which the distance is to be measured and the user must identify at least three points if an area is to be measured. Fenster also teaches generating the measurement graphics without moving the pointer outside the medical image.

Stockham discloses providing the angle measurement without the presence of the menus, toolbars and control panels on the medical image (See column 3, lines 40-45) and measuring the linear distance, angle, rectangular ROI, elliptical ROI etc (column 6, lines 1-5) and thereby Stockham discloses enabling the generation of the at least three measurement graphics without requiring a user to define in advance the type of measurement graphic being generated.

Claim 29:

Although Echerer is silent to the claim limitation of determining which of the at least three measurement graphics is generated based on the topology of points selected upon actuation of said at least one button of said mouse, Fenster and Stockham teach the claim limitation.

Fenster discloses in column 23, lines 25-40 and Fig. 27 using the graphical input device to measure distances and areas of the three-dimensional image within the most recently moved plane without the presence of menus, toolbars and control panels on said graphical interface. Fenster teaches that the user uses the graphical input device to indicate the two end points over which the distance is to be measured and the user must identify at least three points if an area is to be measured. Fenster also teaches generating the measurement graphics without moving the pointer outside the medical image.

Stockham discloses providing the angle measurement without the presence of the menus, toolbars and control panels on the medical image (See column 3, lines 40-45) and measuring the linear distance, angle, rectangular ROI, elliptical ROI etc (column 6, lines 1-5) and thereby Stockham discloses enabling the generation of the at least three measurement graphics without requiring a user to define in advance the type of measurement graphic being generated.

Claim 30:

Although Echerer is silent to the claim limitation of determining which of the at least three measurement graphics is generated based on the number and topology of points selected upon actuation of said at least one button of said mouse, Fenster and Stockham teach the claim limitation.

Fenster discloses in column 23, lines 25-40 and Fig. 27 using the graphical input device to measure distances and areas of the three-dimensional image within the most recently moved

plane without the presence of menus, toolbars and control panels on said graphical interface. Fenster teaches that the user uses the graphical input device to indicate the two end points over which the distance is to be measured and the user must identify at least three points if an area is to be measured. Fenster also teaches generating the measurement graphics without moving the pointer outside the medical image.

Stockham discloses providing the angle measurement without the presence of the menus, toolbars and control panels on the medical image (See column 3, lines 40-45) and measuring the linear distance, angle, rectangular ROI, elliptical ROI etc (column 6, lines 1-5) and thereby Stockham discloses enabling the generation of the at least three measurement graphics without requiring a user to define in advance the type of measurement graphic being generated.

(10) Response to Argument

On Pages 10-14 of Argument, Appellant argues in essence with respect to the claims 1 and 10 and similar claims that:

(A) "In contrast to the manual analysis function, the automatic analysis function shown in Echerer is rigidly structured with respect to possible functions that can be performed (Ibid., column 17, lines 7-9). For an automatic analysis, points are collected, and brightness, contrast, and histogram equalization can be performed as well as the User Zoom function (Ibid., column 17 lines 9-11). However, no other drawing and calculation features are available (Ibid., column 17 lines 11-13).Thus, in an automatic analysis, an analysis file merely includes a set of points and does not include any drawing or

calculations (Ibid., column 17, lines 17-19)....Thus in automatic analysis, the user scrolls through a menu and 'clicks' with the mouse to select the desired prompt, causing the computer to open a certain analysis file to perform the selected measurement, i.e., the user is defining in advance the type of measurement graphics to be generated."

In response to the arguments in (A), while citing certain portions of Echerer's teaching, appellant essentially argues that Echerer teaches away from the claim invention set forth in the claim 1 and similar claims. Although the appellants have amended the claim inventions in numerous occasions during the prosecution, appellants have not overcome the Echerer's reference for the reasons given below.

First of all, the Examiner respectfully disagrees with the appellant's arguments. Echerer's disclosure at least includes aspects (using the mouse together with an image displayed on a monitor without the menus being displayed with the image and performing an automatic analysis of the image) that meet the claim limitations set forth in the claim 1 and similar claims. Although menus can be used in other embodiments, Echerer teaches a preferred embodiment that allows the measurement graphics being generated without the use of menus. Echerer's automatic analysis does not have to rely on a menu or menus provided for specifying a type of measurement graphic. Moreover, appellant's claim 1 set forth the claim limitation of providing a menu-less graphical interface. Echerer's disclosure includes displaying solely an image on a monitor without menus and using the mouse to operate the automatic analysis for the image. Thus Echerer meets the claim limitation of providing a menu-less graphical interface.

Appellant argues that the automatic analysis file merely includes a set of points and does not include any drawing or calculations. Appellant ignores that Echerer teaches that the drawing and calculations are performed automatically with the automatic analysis file (See column 19-24 wherein the automatic analysis file includes data coordinates for the drawing and calculations to be performed). Echerer teaches in Figs. 3-5 that measurements are made and displayed without the menus are involved. The patient image and the normal image are printed with the calculations of interest shown as overlays and the preferred embodiment of the present invention can generate twelve different calculations from a single cervical lateral image and standard calculations have also been set up for all the major views of the spine, hip and extremities (See column 23, lines 43-50 and Figs. 3-5 wherein overlays of the measurement graphics are provided with the medical image).

In view of above, Echerer *in a preferred embodiment* teaches a method for providing and processing a cursored user interaction (*column 17, lines 54-57 wherein a cursor is used to respond to a prompt to select a list of specific analysis. It is noted that a prompt is not a menu*) with a spatially displayed medical image (e.g., the patient image column 23, lines 43-46) and producing graphics related data on said medical image (Figs. 3-5 and column 23, lines 43-50), wherein said method comprises the steps of:

Providing a menu-less graphics interface (*See column 10, lines 1-10 and Figs. 3-5 wherein the medical image is displayed on a monitor without menus being displayed and a mouse is used to operate the medical image*);

Displaying, essentially unobstructed, said medical image in a substantial portion of said graphical interface without the presence of menus, toolbars and control panels on said graphical

interface (*See column 10, lines 1-10 and Figs. 3-5 wherein the medical image is displayed on a monitor without menus being displayed and a mouse is used to operate the medical image*);

Controlling a mouse computer interface device, having at least one button (*e.g., Figs. 3-5 and column 17, lines 54-56 wherein the user employs a mouse to operate the points in the medical image as well as to select the prompt for an automatic analysis*);

Displaying a pointer symbol on said graphical interface, wherein said pointer symbol (e.g., a cursor) represents a current position of said mouse on said graphical interface (*e.g., Figs. 3-5 and column 17, lines 54-56 wherein the user employs a mouse to operate the points in the medical image as well as to select the prompt for an automatic analysis*);

Tracking a status of each of said at least one button (*e.g., Figs. 3-5 and column 17, lines 54-56 wherein the user employs a mouse to operate the points in the medical image as well as to select the prompt for an automatic analysis wherein the status of the mouse button is tracked*);

Detecting a position of said mouse, wherein said position detection step is activated upon actuation of one of said at least one button (*e.g., Figs. 3-5 and column 17, lines 54-56 wherein the user employs a mouse to operate the points in the medical image as well as to select the prompt for an automatic analysis wherein the button press is detected*); and

Generating one of a plurality of measurement graphics related to a predefined set of measurement operations on said medical image upon at least one actuation of said at least one button (*Echerer teaches in Figs. 3-5 that measurements are made and displayed without the menus are involved. The patient image and the normal image are printed with the calculations of interest shown as overlays and the preferred embodiment of the present invention can generate twelve different calculations from a single cervical lateral image and standard calculations have*

also been set up for all the major views of the spine, hip and extremities. See column 23, lines 43-50).

Enabling the generation of the plurality of at least three different measurement graphics using said mouse without activation of toolbars and control panels such that the measurement graphics are generated without movement of said pointer symbol outside of said medical image (*Echerer teaches in Figs. 3-5 that measurements are made and displayed without the menus are involved. The patient image and the normal image are printed with the calculations of interest shown as overlays and the preferred embodiment of the present invention can generate twelve different calculations from a single cervical lateral image and standard calculations have also been set up for all the major views of the spine, hip and extremities. See column 23, lines 43-50*), and

Enabling the generation of the at least three measurement graphics without requiring a user to define in advance the type of measurement graphics being generated (*Echerer teaches in Figs. 3-5 that measurements are made and displayed without the menus are involved. The patient image and the normal image are printed with the calculations of interest shown as overlays and the preferred embodiment of the present invention can generate twelve different calculations from a single cervical lateral image and standard calculations have also been set up for all the major views of the spine, hip and extremities. See column 23, lines 43-50. IMPORTANTLY, see column 19 wherein the entire list of measurement graphics of the same type or different types can be viewed on the monitor once the automatic analysis file can be obtained for the medical image. See column 18, the user extracts an automatic file for the image and then the entire list of measurement graphics are displayed on the monitor; See column 19. The extraction of an*

automatic file for the image is not the same as requiring a user to define in advance the type of measurement graphic being generated. Even if the type of measurement graphic can be determined from the input data in the automatic analysis file, automatic analysis file is not defined by the user, it is provided by an author/originator/creator/administrator of the image or any person other than "a user" set forth in the claim invention), wherein one of the measurement graphics is an angle value quantity which is assigned to a middle point of a continuous tripe-point actuating/positioning (*Echerer teaches in a preferred embodiment set forth in column 19-24 wherein the automatic analysis file may include measuring an angle associated with the points (A, B) and (B, C) and therefore Echerer discloses measuring an angle value quantity which is assigned to the point B of a continuous triple-point positioning of the points A, B and C. See Figs. 3-5 wherein the two lines may be designated as a line connecting the points A and B and a line connecting the points B and C*).

Remarks:

Appellant argues with respect to the claim 1 and similar claims in light of the other embodiments of Echerer while ignoring the basic features of Echerer's teachings that are related to the claim invention set forth in the claim 1. It is noted that anticipation analysis does not require every embodiment of the reference discloses the claim invention.

On Pages 14-15 of Argument, Appellant argues in essence with respect to the claim 1 and similar claims that:

(B) "Thus, in contrast to the allegations in the final Office action and in the Advisory Action, the user in Echerer's automatic analysis mode scrolls through a menu and 'clicks' with the mouse to select the desired prompt, causing the computer to open a certain analysis file to perform the selected drawing or calculation. Therefore in the automatic analysis mode, a user of Echerer's automatic analysis mode cannot generate a drawing or calculation without using the mouse to scroll through a list of prompts to select a drawing or calculation to be performed, i.e., a user is defining in advance the type of drawing or calculations to be generated."

In response to arguments in (B), appellant's claim limitation requires enabling the generation of the at least thee measurement graphics without requiring a user to define in advance the type of measurement graphic being generated. It is noteworthy that the type of measurement graphic as claimed is a singular type and the three measurement graphics is related to a singular type of measurement graphic. The prompt as disclosed in Echerer column 17, lines 54-57 as relating to the automatic analysis file does not refer to the type of measurement graphic as required by the claim. The user does not have to specify the type of measurement graphic as the system automatically determine the type of measurement graphic from the input data set forth in the automatic analysis file (See column 19-24). For the sake of argument, even if appellant argues that the automatic analysis file somewhat specifies data including the angle measurement data that is later used to determine a type of measurement graphic, however, the automatic analysis file may be prescribed by the application developer, as opposed to a user. The measurement input data can be specified in the automatic analysis file. The prompts are related

to the list of analysis and clicking on a prompt is related to the input data to be selected and has nothing to do with defining in advance the type of measurement graphic being generated. Moreover, the prompts are not in form of menus, toolbars or control panels and thus cannot be viewed as any of the menus, toolbars of control panels. Appellant also argues that Fig.6 of Echerer is a menu. However, this is another embodiment and the menu disappears after selection without obstructing the medical image. Moreover, the menu just like the prompt is related to the input data to be selected and is not related to the type of measurement graphic.

Echerer discloses in column 10, lines 1-10 a monitor displaying only a medical image without the menus, toolbars and control panels being displayed with the medical image (See Figs. 3-5). Moreover, Echerer's prompt allows the user to enter data and the prompt is different in concept from a menu, a toolbar or a control panel wherein a menu is related to specifying a type of measurement graphic and Echerer's prompt has nothing to do with specifying the type of measurement graphic.

On Page 10 of Argument, Appellant argues in essence with respect to the claim 1 and similar claims that:

> (C) "A manual analysis also allows a user to determine certain measurements within the image. For example, to measure a distance, a user presses the "Distance" button on the Manual Analysis menu and the CPU is instructed by the user to report the coordinates of the next two consecutive points, indicated as 'clicks' of a left mouse button (Ibid., column 13, lines 32-49). To measure an angle, the user presses the 'Measure Angle'

button on the Manual Analysis menu and the user must then click the left mouse cursor on two existing lines that have been previously drawn (Ibid., column 15 lines 16-19)."

In response to the arguments in (C), appellant argues in essence with respect to the claim 1 and similar claims a menu-less graphical user interface. However, Echerer teaches using the mouse operating on an image displayed on the monitor without operating those menus displayed on another monitor. Although a menu or menus can be present on another monitor, menus may not be used at all with the mouse user interface combined with the medical image in at least one session of the graphical user interface in Echerer. Echerer does not have to move the cursor outside the medical image in order to perform the claim invention set forth in the claims 1 and 10. That is, Echerer does not have to employ the menu outside of the monitor or outside of the medical image. Echerer's user-cursor-medical image interaction is enough to provide a sequence of measurement graphics of the same type without the use of menu. This is very reason that Echerer's manual analysis also teaches the claim invention set forth in the claims 1 and 10. Echerer teaches in Figs. 3-5 that the medical image and measurement graphics is measured, drawn and displayed without the menus, toolbars and control panels being operated/displayed and in column 10, lines 1-10 the medical image is solely displayed on a monitor without the presence of menus, toolbars and control panels (See also Figs. 3-5).

For example, with regards to the manual analysis, Echerer discloses the claim limitation, "displaying, essentially unobstructed, said medical image in a substantial portion of said graphical interface without the presence of menus, toolbars and control panels on said graphical interface." Echerer teaches in column 10, lines 1-10 displaying an image solely in one monitor

without the presence of menus, toolbars and control panels on said graphical interface on the same monitor because buttons, slides and adjustment tools are displayed on another monitor, or an external monitor that has nothing to do with the monitor displaying the medical image. Echerer teaches in column 10, lines 1-10 displaying a MEDICAL image solely in one monitor AND THEREBY ECHERER TEACHES DISPLAYING THE MEDICAL IMAGE, ESSENTIALLY UNOBSTUCTED, IN A SUBSTANTIAL PORTION OF A GRAPHICAL INTERFACE. See Figs. 1, 4-5, 10A-11 of Echerer. Echerer teaches displaying the medical image essentially unobstructed in a substantial portion of a graphical interface wherein the user can freely manipulate the pointer/mouse to select points for measuring angles. This is because the type of measurement graphic (singular) can be specified in advance by an application developer or by default, as opposed to be specified by a user wherein the claim limitation requires. For example, when the angle measurement is specified by default, a first angle for points (A, B) and (B, C), a second angle for points (D, E) and (E, F) and a third angle for points (G, H) and points (H, I) can be measured by clicking on the buttons of the mouse on the points on the medical image. Generating an angle measurement in the process also generates a set of different measurement graphics. Moreover, three measurement graphics may also refer to the line connecting points A and B, the line connecting points B and C and the angle quantity for the same angle measurement (See Figs. 3-5) wherein only one angle measurement generates three measurement graphics as claimed.

Echerer discloses enabling the generation of the measurement graphics of the same type at least in a default setting wherein the default setting provdes the angle measurement. For example, by continuouly generating thee different measurement graphics including measuring a

first angle by clicking on the points A, B and then points B, C and measuring second angle by clicking on the points D, E and then points E, F and measuring a third angle by clicking on the points G, H and H, I, the three different measurement graphics are continuously generated without engaging a "Measure Angle" button because the angle measurement is a default setting in at least one session of the graphics user interface.

Thus, in the above aspect of the invention, Echerer teaches using a mouse only *without engaging menus, toolbars or control panels in another monitor*. See e.g., column 10, lines 1-10, column 12, lines 20-30; column 13, lines 25-50; column 15, lines 15-35. Echerer teaches using the pointer device to place points without moving the cursor outside the medical image and without engaging a menu outside the monitor while enabling the generation of the measurement graphics because the system already knows the type of measurement graphic to be generated in the manual analysis.

Echerer implicitly discloses the claim limitation, "enabling the generation of the at least three measurement graphics without requiring a user to define in advance the type of measurement graphic being generated". Echerer's generation of the at least three different measurement graphics (OF THE SAME TYPE) is performed at least through the manual analysis operating on at least one measurement type such as the angle measurement that may generate a plurality of measurement graphics as desired. Moreover, Echerer teaches using the pointer device to place points thus enabling the generation of the measurement graphics without requiring a user to define a type of graphic being generated.

Based on the above analysis, Echerer in the manual analysis embodiment teaches a method for providing and processing a cursored user interaction (*Figs. 3-5; 10-11*) with a

spatially displayed medical image (*Figs. 3-5 and 10-11*) and producing graphics related data on said medical image (*Figs. 3-5 and 10-11*), wherein said method comprises the steps of:

Providing a menu-less graphics interface (*Figs. 3-5 and 10-11; column 10, lines 1-10 wherein the graphical interface of Figs. 3-5 and 10-11 only provides a medical image and does not have a menu; ; see column 10, lines 1-10 wherein the medical image is solely displayed on a monitor* ***without moving the cursor outside of the medical image;*** *Echerer does not have to move the cursor outside the medical image in order to perform the claim invention set forth in the claims 1 and 10. That is, Echerer does not have to employ the menu outside of the monitor or outside of the medical image. Echerer's user-cursor-medical image interaction is enough to provide a sequence of measurement graphics of the same type without the use of menu. Since the claim 1 only set forth "the type of measurement graphic" and thus a singular type of measurement graphic is claimed. Echerer teaches the claim limitations using the cursor interaction without using the menu. For argument sake, even if multiple types of measurement graphics are claimed, it is a trivial matter to modify Echerer's application program logic to interact with the mouse only without using the menu and Echerer teaches all the functionalities of the three types of measurement graphics and the modified logic is for switching the types of measurement graphics using the cursor without using the menu);*

Displaying, essentially unobstructed, said medical image in a substantial portion of said graphical interface without the presence of menus, toolbars and control panels on said graphical interface (*Figs. 3-5 and 10-11; column 10, lines 1-10 wherein the graphical interface of Figs. 3-5 and 10-11 does not have a menu, or a toolbar or a control panel and wherein the medical*

image is unobstructed by any menu, toolbar or control panel; see column 10, lines 1-10 wherein the medical image is solely displayed on a monitor);

Controlling a mouse computer interface device, having at least one button (*Figs. 3-5 and 10-11; column 10, lines 1-10 wherein the mouse buttons are clicked on the points on the medical image for selecting the points for measurement purposes*);

Displaying a pointer symbol on said graphical interface, wherein said pointer symbol (e.g., a cursor) represents a current position of said mouse on said graphical interface (*Figs. 3-5 and 10-11 wherein button clicks are invoked to generate the measurement graphics such as the angle measurement wherein the angle measurement can be set by default*);

Tracking a status of each of said at least one button (*Fig. 3-5 and 10-11 wherein button clicks are invoked to generate the measurement graphics such as the angle measurement and wherein the status of the mouse button is tracked*);

Detecting a position of said mouse, wherein said position detection step is activated upon actuation of one of said at least one button (*Figs.3-5 and 10-11 wherein button clicks are invoked to generate the measurement graphics such as the angle measurement and the point positions of the cursor are tracked and detected*); and

Generating one of a plurality of measurement graphics related to a predefined set of measurement operations on said medical image upon at least one actuation of said at least one button (*Figs. 3-5 and 10-11 wherein button clicks are invoked to continuously generate the measurement graphics such as the angle measurement and the angle measurements can be repeatedly generated* ***without*** *invoking a menu outside of the medical image or outside of the monitor; see column 10, lines 1-10 wherein the medical image is solely displayed on a monitor*).

Enabling the generation of the plurality of at least three different measurement graphics using said mouse without activation of toolbars and control panels such that the measurement graphics are generated without movement of said pointer symbol outside of said medical image (*Figs. 3-5 and 10-11 wherein button clicks are invoked to generate the measurement graphics such as the angle measurement and the angle measurements can be repeatedly generated and pointer is not moved outside of the image in Figs. 3-5 and 10-11 while generating the angle measurement and three measurement graphics; see column 10, lines 1-10 wherein the medical image is solely displayed on a monitor*), and

Enabling the generation of the at least three measurement graphics without requiring a user to define in advance the type of measurement graphic being generated (*Figs. 3-5 and 10-11 wherein button clicks are invoked to generate the measurement graphics such as the angle measurement and the angle measurements can be repeatedly generated and pointer is not moved outside of the medical image in Figs. 3-5 and 10-11 while generating the angle measurement and three measurement graphics and the type of measurement graphic can be defined by default, it is not defined by a user*), wherein one of the measurement graphics is an angle value quantity which is assigned to a middle point of a continuous triple-point actuating/positioning (*Figs. 3-5 and 10-11 wherein button clicks are invoked to generate the measurement graphics such as the angle measurement and the angle measurements can be repeatedly generated and pointer is not moved outside of the image in Figs. 3-5 and 10-11 while generating the angle measurement and three measurement graphics and the type of measurement graphic can be defined by default, it is not defined by a user. The angle measurement requires a selection of two pairs of points*

including the points (A, B) and (B, C) and the measured angle is assigned to the middle point B by selection).

Therefore, Echerer has another embodiment that at least teaches or suggests the claim limitations set forth in the claims 1 and 10 and similar claims.

On Pages 15-17 of Argument, Appellant argues in essence with respect to the claims 1 and 10 and similar claims that:

(D) "Fenster fails to teach or suggest an apparatus arranged to provide and process a cursored user interaction with a spatially displayed medical image including a menu-less graphical interface arranged to display, essentially unobstructed, the medical image in a substantial portion of the graphical interface without the presence of menus, toolbars and control panels on the graphical interface."

In response to the arguments in (D), the examiner respectfully disagrees with the appellant's arguments for the following reasons.

Fenster teaches in Figs. 21-25 displaying the medical image essentially unobstructed in a substantial portion of the graphical interface without the presence of menus, toolbars and control panels on the graphical interface. Moreover, Fenster discloses in column 23, lines 25-40 and Fig. 27 using the graphical input device to measure distances and areas of the three-dimensional image within the most recently moved plane without the presence of menus, toolbars and control panels on said medical image or on said graphical interface. Fenster teaches that the user uses the

graphical input device to indicate the two end points over which the distance is to be measured and the user must identify at least three points if an area is to be measured. This process does not require a user to move the cursor out of the medical image. Fenster also teaches generating a set of the measurement graphics without moving the pointer outside the medical image.

Fenster discloses enabling the generation of measurement graphics based only upon the actuation of the at least one button of the mouse. Fenster at least teaches generating three measurement graphics based upon the actuation of the at least one button of the mouse by measuring distances or measuring areas.

Appellant argues that the Measure Icon of Fenster outside of the medical image is one of the menus, toolbars and control panels on the medical image. This statement is simply incorrect. The Measure Icon is outside of the medical image and an icon is different in concept from any of the menus, toolbars and control panels. Fenster's medical image is displayed without the presence of menus, toolbars and control panels (See Fenster Figs. 21-27).

Appellant argues that Fenster's measurement icon sits on a control panel. This argument is irrelevant to the claim limitations set forth in the claim 1 and similar claims. Fenster's measurement icon does not sit on a control panel. Fenster's measurement icon has nothing to do with the definition of the type of measurement graphic being generated. The type of measurement graphic is related to measuring the distance or the area or both while the measurement icon allows the measurement action being initiated for the medical image. Fenster teaches continously generating at least three measurement graphics such as measuring distances for the three different pairs of points without letting the cursor/pointer to go outside of the medical image and/or without a user to define the type of the measurement graphic being

generated (See column 23, lines 25-40). Importantly, Fenster further teaches continously generating three different measurement graphics by measuring the area quantity and/or the distance quantity as the system knows whether the area quantity and/or the distance quantity should be measured depending on the number of points being clicked by the mouse. Fenster thus teaches that the type of measurement graphic does not have to be defined in advance by going out of the medical image. Fenster's reference is thus cited against the claims in view of the manual analysis using the mouse buttons.

In summary, Fenster teaches a method for providing and processing a cursored user interaction (*Figs. 21-27*) with a spatially displayed medical image (*Figs. 21-27*) and producing graphics related data on said medical image (*Figs. 21-27*), wherein said method comprises the steps of:

Providing a menu-less graphics interface (*Figs. 21-27; column 23, lines 25-40 wherein the graphical interface of Figs. 21-27 only provides a medical image and does not have a menu*);

Displaying, essentially unobstructed, said medical image in a substantial portion of said graphical interface without the presence of menus, toolbars and control panels on said graphical interface (*Figs. 21-27; column 23, lines 25-40 wherein the medical image is unobstructed by any menu, toolbar or control panel*);

Controlling a mouse computer interface device, having at least one button (*Figs. 21-27; column 23, lines 25-40 wherein the mouse buttons are clicked on the points on the medical image for selecting the points for measurement purposes*);

Displaying a pointer symbol on said graphical interface, wherein said pointer symbol (e.g., a cursor) represents a current position of said mouse on said graphical interface (*Figs. 21-*

27; column 23, lines 25-40 wherein button clicks are invoked to generate the measurement graphics including the distance and area measurements);

Tracking a status of each of said at least one button (*Figs. 21-27; column 23, lines 25-40 wherein button clicks are invoked to generate the measurement graphics such as the distance and area measurement and wherein the status of the mouse button is tracked*);

Detecting a position of said mouse, wherein said position detection step is activated upon actuation of one of said at least one button (*Figs. 21-27; column 23, lines 25-40 wherein button clicks are invoked to generate the measurement graphics such as the distance and area measurements and the point positions of the cursor are tracked and detected in order to calculate the measurements*); and

Generating one of a plurality of measurement graphics related to a predefined set of measurement operations on said medical image upon at least one actuation of said at least one button (*Figs. 21-27; column 23, lines 25-40 wherein button clicks are invoked to continuously generate the measurement graphics such as the distance and area measurements* ***without*** *invoking a menu outside of the medical image or outside of the monitor*).

Enabling the generation of the plurality of at least three different measurement graphics using said mouse without activation of toolbars and control panels such that the measurement graphics are generated without movement of said pointer symbol outside of said medical image (*Figs. 21-27; column 23, lines 25-40 wherein button clicks are invoked to generate the measurement graphics including the distance and area measurements and pointer is not moved outside of the image in Figs. 21-27; column 23, lines 25-40*), and

Enabling the generation of the at least three measurement graphics without requiring a user to define in advance the type of measurement graphic being generated (*Figs. 21-27; column 23, lines 25-40 wherein button clicks are invoked to generate the measurement graphics including the distance and area measurements and pointer is not moved outside of the image in Figs. 21-27; column 23, lines 25-40 while generating the three measurement graphics and the distance and area measurements are continuously generated without requiring a user to define in advance the type of measurement graphic being generated*).

On Pages 17-20 of Argument, Appellant argues in essence with respect to the claims 1 and 10 and similar claims that:

(E) "Nowhere does Stockham teach or suggest a method for providing and processing a cursored user interaction with a spatially displayed medical image and producing graphics related data on the medical image including displaying, essentially unobstructed, the medical image in a substantial portion of the graphical interface without the presence of menus, toolbars and control panels on the graphical interface, to which claim 1 is directed. In contrast to the subject matter of claim 1, Stockham's screen for displaying radiological images includes controls, icons, and a toolbar."

In response to the arguments in (E), the examiner respectfully disagrees with every element of the appellant's arguments for the following reasons.

According to MPEP 2106, Office personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris, 127 F.3d 1048, 1054-55,*

44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. *E-Pass Techs., Inc. v. 3Com Corp., 343 F.3d 1364, 1369, 67 USPQ2d 1947, 1950 (Fed. Cir. 2003)* (claims must be interpreted 'in view of the specification' without importing limitations from the specification into the claims unnecessarily).*In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969). See also In re Zletz, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989).*

Stockham discloses enabling the generation of at least three different measurement graphics based only upon the actuation of the at least one button of the mouse. Stockham discloses providing the angle measurement just using the mouse without the presence of the menus, toolbars and control panels on the mouse's interface with said medical image (See column 3, lines 40-45 and Figs. 1-5) and measuring the linear distance, angle, rectangular ROI, elliptical ROI etc (column 6, lines 1-5) and thereby Stockham discloses enabling the generation of the at least three measurement graphics without requiring a user to define in advance the type of measurement graphic being generated.

It is noted that Stockham's icons are not on the medical image displayed on the graphical interface and the medical image is displayed essentially unobstructed on the displays of Figs. 1-5 without the presence of menus, toolbars and control panels on the medical images of Figs. 1-5. Moreover, Stockham's icons are not even displayed on the medical image in a substantial portion of said medical image. Thus, Stockham teaches the claim limitation of "displaying, essentially unobstructed, said medical image in a substantial portion of said graphical interface without the presence of menus, toolbars and control panels on said graphical interface."

Stockham teaches in Figs. 1-5 continously generating at least three measurement graphics such as measuring three different angles without letting the cursor to go outsideof the medical image or without a user to define the type of the measurement graphic being generated because the type of measurement graphic can be obtained by default. Therefore, Stockham teaches enabling the generation of the at least three measurement graphics (three angles) without requiring a user to define in advance the type of measurement graphic being generated (the type of angle measurement can be obtained by default).

Stockham further discloses generating an angle measurement related to a predefined set of measurement operations such as the clicking of three points on the medical image upon at least one actuation of said at least one button of the mouse (Figs. 1-5 and column 6, lines 1-5).

Stockham discloses no menu being displayed on the medical image (See column 3). Although Stockham discloses a toolbar is displayed, no toolbar is displayed on said mouse-and-cursor's graphical interface with the medical images of the Figs. 1-5. Moreover, the controls 32-37 are icons and are not even related to the menus and control panels and may not be presented in the form of a toolbar. Stockham further discloses when said medical image is displayed on said medical image without the presence of menus, toolbars and control panels on said medical image (Stockham's medical image in Figs. 1-5 has no menu, toolbar or control panel overlaying on the medical image and an icon is not the same as a menu, a toolbar or a control panel that is not displayed on the medical image to be measured), enabling the generation of different measurement graphics (for example three angle measurements) based only upon actuation of said at least one button of said mouse (appellant's invention requires at least a plurality of clicking of the mouse buttons, however appellant claim limitation recites "based only upon", nevertheless,

Stockham discloses clicking on the mouse buttons to generate the angle measurements without going outside of the medical image) when said pointer symbol is situated on said medical image such that the measurement graphics are generated without movement of said pointer symbol outside of said medical image (See Fgis. 1-5 and column 6, lines 1-5). Stockham's angle measurement requires three-point positioning and therefore Stockham at least teaches or suggests the claim limitation "wherein one of the measurement graphics is an angle value quantity which is assigned to a middle point of a continuous triple-point actuating/positioning."

Appellant argues that Stockham discloses a toolbar on the monitor of Figs. 1 and 6. However, the toolbar is not on the organ image and the organ image is still displayed essentially unobstructed.

In summary, Stockham teaches a method for providing and processing a cursored user interaction (column 6, lines 1-5) with a spatially displayed medical image (column 6, lines 1-5) and producing graphics related data on said medical image (column 6, lines 1-5), wherein said method comprises the steps of:

Providing a menu-less graphics interface (column 6, lines 1-5 *wherein Figs. 1-5's graphical interface such as the medical image display area does not have a menu*);

Displaying, essentially unobstructed, said medical image in a substantial portion of said graphical interface without the presence of menus, toolbars and control panels on said graphical interface (column 6, lines 1-5 *wherein Figs. 1-5's graphical interface such as the medical image display area does not have a menu, or a toolbar or a control panel*);

Controlling a mouse computer interface device, having at least one button (column 6, lines 1-5 *and Figs. 1-5 wherein button clicks are invoked to generate the measurement graphics such as the angle measurement*);

Displaying a pointer symbol on said graphical interface, wherein said pointer symbol (e.g., a cursor) represents a current position of said mouse on said graphical interface (*Figs. 1-5 and column 6 wherein button clicks are invoked to generate the measurement graphics such as the angle measurement*);

Tracking a status of each of said at least one button (*Figs. 1-5 and column 6 wherein button clicks are invoked to generate the measurement graphics such as the angle measurement and wherein the status of the mouse button is tracked*);

Detecting a position of said mouse, wherein said position detection step is activated upon actuation of one of said at least one button (*Figs. 1-5 and column 6 wherein button clicks are invoked to generate the measurement graphics such as the angle measurement and the point positions of the cursor are tracked and detected*); and

Generating one of a plurality of measurement graphics related to a predefined set of measurement operations on said medical image upon at least one actuation of said at least one button (*Figs. 1-5 and column 6 wherein button clicks are invoked to generate the measurement graphics such as the angle measurement and the angle measurements can be repeatedly generated*).

Enabling the generation of the plurality of at least three different measurement graphics using said mouse without activation of toolbars and control panels such that the measurement graphics are generated without movement of said pointer symbol outside of said medical image

(*Figs. 1-52 and column 6 wherein button clicks are invoked to generate the measurement graphics such as the angle measurement and the angle measurements can be repeatedly generated and pointer is not moved outside of the image in Figs. 1-5 while generating the angle measurement and the associated measurement graphics*), and

Enabling the generation of the at least three measurement graphics without requiring a user to define in advance the type of measurement graphic being generated (*Figs. 1-5 and column 6 wherein button clicks are invoked to generate the measurement graphics such as the angle measurement and the angle measurements can be repeatedly generated and pointer is not moved outside of a medical image of Figs. 1-5 while generating the angle measurement and three measurement graphics. The three measurement graphics of Fig. 22 are generated the type of measurement graphic is not defined by the user, it can be defined by default*), wherein one of the measurement graphics is an angle value quantity which is assigned to a middle point of a continuous triple-point actuating/positioning (*Figs. 1-5 and column 6 wherein button clicks are invoked to generate the measurement graphics such as the angle measurement and the angle measurements can be repeatedly generated and the angle measurement requires triple-point actuating/positioning*).

On Pages 21-23 of Argument, Appellant argues in essence with respect to the claim 1 and similar claims that:

(F) "Buxton fails to teach or suggest enabling the generation of the at least three measurement graphics without requiring a user to define in advance the type of measurement graphic being generated, to which claim 1 is directed. In contrast to the subject matter of claim 1, Buxton shows only that generating a measurement graphic requires a shape palette tool containing a set of pre-defined shapes within the display screen..."

In response to the arguments in (F), the examiner respectfully disagrees with every element of the appellant's arguments for the following reasons.

Buxton discloses the claim limitation of "triple-point actuation/positioning" (Buxton column 19, lines 55-67 and Fig. 22). Buxton discloses measuring the lengths, slopes and coordinates and slopes using the button tool and measuring the angle of the tripe points clicked wherein the angle is related to the middle point of the last three point clicked (See Buxton column 19, lines 55-67 and Fig. 22).

Appellant argues that the click-through tool of Buxton is in the form of one of the menus, toolbars and control panels. The examiner respectfully disagrees with the applicant's argument. Buxton's click-through tool is not a menu, or a toolbar or a control panel. Fig. 22 of Buxton does not show any menu, toolbar or control panel. Instead, Fig. 22 of Buxton discloses triple-point actuation/positioning as required by the claim 1 and similar claims.

Moreover, in column 19, lines 55-67, it is stated, "when the user clicks on an object corner through this tool, the coordinates of that corner are reported. If the user click again, the system reports the length and slope from the first point to the second. If the user clicks a third

time, the system reports the angle made by the last three points clicked." This teaching of Buxton as applied to the Echerer's medical image exactly teaches the claimed invention set forth in the claim 1. Buxton's technique of tripe-point positioning and actuating can be applied to any image including a medical image (See Fig. 22).

In summary, Buxton teaches a method for providing and processing a cursored user interaction (*Fig. 22 and column 19, lines 55-67*) with a spatially displayed medical image (*Fig. 22 and column 19, lines 55-67 wherein Buxton's technique is applied to the medical image*) and producing graphics related data on said medical image (*Fig. 22 and column 19, lines 55-67 wherein Buxton's technique is applied to the medical image*), wherein said method comprises the steps of:

Providing a menu-less graphics interface (*Fig. 22 and column 19, lines 55-67 wherein Fig. 22's graphical interface does not provide a menu without moving the cursor outside of the graphical image*);

Displaying, essentially unobstructed, said medical image in a substantial portion of said graphical interface without the presence of menus, toolbars and control panels on said graphical interface (*Fig. 22 and column 19, lines 55-67 wherein Fig. 22's graphical interface does not provide a menu or a toolbar or a control panel and no toolbar is seen in Fig. 22. A click-through tool is NOT a toolbar*);

Controlling a mouse computer interface device, having at least one button (*Fig. 22 and column 19, lines 55-67 wherein button clicks are invoked to generate the measurement graphics such as the angle measurement*);

Displaying a pointer symbol on said graphical interface, wherein said pointer symbol (e.g., a cursor) represents a current position of said mouse on said graphical interface (*Fig. 22 and column 19, lines 55-67 wherein button clicks are invoked to generate the measurement graphics such as the angle measurement*);

Tracking a status of each of said at least one button (*Fig. 22 and column 19, lines 55-67 wherein button clicks are invoked to generate the measurement graphics such as the angle measurement and wherein the status of the mouse button is tracked*);

Detecting a position of said mouse, wherein said position detection step is activated upon actuation of one of said at least one button (*Fig. 22 and column 19, lines 55-67 wherein button clicks are invoked to generate the measurement graphics such as the angle measurement and the point positions of the cursor are tracked and detected*); and

Generating one of a plurality of measurement graphics related to a predefined set of measurement operations on said medical image upon at least one actuation of said at least one button (*Fig. 22 and column 19, lines 55-67 wherein button clicks are invoked to generate the measurement graphics such as the angle measurement and the angle measurements can be repeatedly generated*).

Enabling the generation of the plurality of at least three different measurement graphics using said mouse without activation of toolbars and control panels such that the measurement graphics are generated without movement of said pointer symbol outside of said medical image (*Fig. 22 and column 19, lines 55-67 wherein button clicks are invoked to generate the measurement graphics such as the angle measurement and the angle measurements can be*

repeatedly generated and pointer is not moved outside of the image in Fig. 22 while generating the angle measurement and three measurement graphics are shown in Fig. 22), and

Enabling the generation of the at least three measurement graphics without requiring a user to define in advance the type of measurement graphic being generated (*Fig. 22 and column 19, lines 55-67 wherein button clicks are invoked to generate the measurement graphics such as the angle measurement and the angle measurements can be repeatedly generated and pointer is not moved outside of the image of Fig. 22 while generating the angle measurement and three measurement graphics are shown in Fig. 22. The three measurement graphics of Fig. 22 are generated without requiring a user to define in advance the type of measurement graphic being generated*), wherein one of the measurement graphics is an angle value quantity which is assigned to a middle point of a continuous triple-point actuating/positioning (*Fig. 22 and column 19, lines 55-67 wherein button clicks are invoked to generate the measurement graphics such as the angle measurement and the angle measurements can be repeatedly generated and pointer is not moved outside of the image of Fig. 22 while generating the angle measurement and three measurement graphics are shown in Fig. 22. The three measurement graphics of Fig. 22 are generated without requiring a user to define in advance the type of measurement graphic being generated*).

On Pages 23-31 of Argument, Appellant argues in essence with respect to the claims 1 and 10 and similar claims that:

(G) "According to a summary of criteria in the Manual of Patent Examining Procedure, 'to establish a prima facia case of obviousness, three basic criteria must be met. First,

there must be some suggestion or motivation, either in the reference themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure.'...Therefore, there would have been no motivation to combine the method and apparatus in Buxton with the methods and apparatus of Echerer, Fenster and Stockham, as such a combination would have required a complete reconstruction and change in the basic principles of operation of the method and apparatus of the method and apparatus in Buxton."

In response to the motivational arguments, the examiner discussed in detail in responses to the arguments (A)-(F) that each of the cited references, Echerer, Fenster, Stockham and Buxton, individually or in combination, teaches or suggests the claim limitations set forth in the claims 1 and 10. The examiner further responds to the arguments set forth in Pages 23-31 of the appellant's Argument.

Moreover, appellant is directed to the rejections to the claims 1 and 10 and similar claims set forth in above wherein the motivations for combining the references are addressed and the relevant portions of the references are specifically determined. Moreover, in responses to the arguments set forth in Items (A)-(F), the examiner has given the details why each of the cited references teaches or suggests all the claim limitations set forth in the claims 1 and 10. Thus, the

criteria set forth in the MPEP is met for the reasons given in above as well as the reasons set forth below.

Appellant further argues with respect to the claims 1 and 10 and similar claims the references do not teach the claim limitations set forth in the claims 1 and 10, by repeating substantially the arguments set forth in the Pages 9-23 of the Argument. However, the examiner in responses to the arguments (A)-(F) already has addressed these issues. The examiner wishes not to repeat his answer to the arguments set forth in the Pages 23-31 that are similar to the arguments already being presented in Pages 9-23 and these arguments have already being addressed in the responses to the arguments in (A)-(F) and the responses apply here too. In summary, each of the cited references teaches or suggests all of the claim limitations set forth in the claims 1 and 10 and similar claims.

Appellant further cited a court case in Page 29 of Argument. As the claim limitations in the court case and the cited references against the claims are drastically different. It is irrelevant to the claim inventions set forth in the present application. Appellant's analysis is thus irrelevant to rejections set forth in above.

In Pages 29-30, Appellants focus their attention on the Buxton's user interface while the appellants argue with other aspects/embodiments of Buxton's teaching. However, Buxton's user interface of Fig. 22 only requires a mouse to allow a user to click on the three points forming an angle and three measurement graphics are generated. Nothing more has been involved. The teaching of a mouse operating on an image to provide measurement graphics is common in any of the cited references in above including Echerer and Buxton.

In particular, Echerer teaches or suggests in Figs. 3-5 and 10-11 the claim limitation of "wherein one of the measurement graphics is an angle value quantity which is assigned to a middle point of a continuous triple-point actuating/positioning." Echerer teaches that button clicks are invoked to generate the measurement graphics such as the angle measurement and the angle measurements can be repeatedly generated and pointer is not moved outside of the image in Figs. 3-5 and 10-11 while generating the angle measurement and three measurement graphics and the type of measurement graphic can be defined by default, it is not defined by a user. For example, the angle measurement requires a selection of two pairs of points including the points (A, B) and (B, C) and the measured angle is assigned to the middle point B by selection. Following Buxton's teaching, Echerer's application program can be programmed to perform the angle measurement using a continuous three-point actuation instead of the two pairs of points actuation. One of the ordinary skill in the art understands that the application program can be adapted to perform the angle measurement based a continuous three-point actuation using the cursor interaction events/clicks according to Buxton's teaching.

Buxton teaches in Fig. 22 and column 19, lines 55-67 that the button clicks are invoked to generate the measurement graphics such as the angle measurement and the angle measurements can be repeatedly generated and pointer is not moved outside of the image of Fig. 22 while generating the angle measurement and three measurement graphics are shown in Fig. 22. The three measurement graphics of Fig. 22 are generated without requiring a user to define in advance the type of measurement graphic being generated. Buxton's technique of providing measurement graphics can be applied to any image including a medical image.

Motivation Analysis in response to Appellants' Arguments:

It would have been obvious to have incorporated Buxton's triple-point actuation/positioning into Echerer, Fenster and Stockham's method because **Echerer teaches or suggests the claim limitation by disclosing measuring the angle between two lines formed by two pairs of points such as the points (A, B) and the points (B, C). Therefore, Echerer teaches or suggests the claim limitation of "triple-point actuation/positioning"**.

In view of Echerer's Manual Analysis Embodiment, Echerer does not have to move the cursor outside the medical image in order to perform the claim invention set forth in the claims 1 and 10. That is, Echerer does not have to employ the menu outside of the monitor or outside of the medical image. Echerer's user-cursor-medical image interaction is enough to provide a sequence of measurement graphics of the same type without the use of menu. Since the claim 1 only set forth "the type of measurement graphic" and thus a singular type of measurement graphic is claimed. Echerer teaches the claim limitations using the cursor interaction without using the menu. For argument sake, even if multiple types of measurement graphics are claimed, **in view of Echerer's Manual Analysis Embodiment**, it is a trivial matter to modify Echerer's application program logic to interact with the mouse only without using the menu and Echerer teaches all the functionalities of the three types of measurement graphics and the modified logic is for switching the types of measurement graphics using the cursor without using the menu which is trivial.

Therefore, having the combined teaching of Echerer, Fenster, Stockham and Buxton, one of the ordinary skill in the art would have been motivated to measure the angle associated with three points as clicked by the user using the mouse because this allows the angle measurements

be made based on the input from the mouse buttons (Buxton column 19, lines 55-67 and Fig. 22) and the angle measurement technique of Buxton as disclosed in Fig. 22 can be applied to any image including a medical image of Echerer by reading a medical image from a bitmap image file (See Buxton column 9, lines 40-51 wherein a bitmap image is disclosed and Echerer column 6 and in particular column 6 lines 26-34 wherein Echerer discloses a single image file having a bitmap resolution that can be loaded into Buxton's system to allow the triple points positioning/actuating to be performed on the medical image of Echerer).

Motivation Analysis for incorporating Fenster into Echerer:

It would have been obvious to one of ordinary skill in the art to have incorporated the Fenster's measurement method into Echerer's method of processing cursored user interaction because Echerer implicitly suggests providing a menu-less graphical interface for displaying said medical image (*Echerer column 10, lines 1-10 wherein the image is solely displayed in a monitor without menus, toolbars and control panels while being manipulated by the pointing device of column 17-18*) because Echerer's medical image is not covered by the menus, toolbars and control panels (e.g., Echerer column 12, lines 20-30; column 13, lines 25-50) and providing a predefined interaction with said medical image, wherein said interaction is selected from a group of predefined interactions based on said status of each of said at least one button during the interval between multiple said position detection steps (e.g., Echerer column 16, lines 15-67; column 17, lines 1-67; column 18, lines 1-64) therefore suggesting an obvious modification of the Echerer's method for processing a radiograph. Following Fenster's teaching, Echerer's application program can be programmed to perform at least two types of measurement graphics

using a continuous cursor interaction instead of the interaction with menu for switching the types of measurement graphics. One of the ordinary skill in the art understands that the application program can be adapted to perform more than one types of measurement graphics using the cursor interaction events/clicks according to Fenster's teaching. Because only one type of measurement graphic is claimed in the claim 1, Echerer or Fenster teaches or suggests the claim limitations set forth in the claim 1. Moreover, as addressed in the response to arguments in (D), Fenster discloses other claim limitations set forth in the claim 1 as well.

In view of Echerer's Manual Analysis Embodiment, Echerer does not have to move the cursor outside the medical image in order to perform the claim invention set forth in the claims 1 and 10. That is, Echerer does not have to employ the menu outside of the monitor or outside of the medical image. Echerer's user-cursor-medical image interaction is enough to provide a sequence of measurement graphics of the same type without the use of menu. Since the claim 1 only set forth "the type of measurement graphic" and thus a singular type of measurement graphic is claimed. Echerer teaches the claim limitations using the cursor interaction without using the menu. For argument sake, even if multiple types of measurement graphics are claimed, **in view of Echerer's Manual Analysis Embodiment**, it is a trivial matter to modify Echerer's application program logic to interact with the mouse only without using the menu and Echerer teaches all the functionalities of the three types of measurement graphics and the modified logic is for switching the types of measurement graphics using the cursor without using the menu which is trivial according to the teaching of Fenster as Fenster allows the switching of the types of the measurement graphics using the mouse clicking only without using the menu.

One having the ordinary skill in the art would have been motivated to provide more than one types of measurement graphics (Fenster column 23 and Fig. 27) performed by the application program in response to the cursor interaction wherein the application program is programmed in response to the cursor interaction events/clicks to perform more than one types of measurement graphics without using the menus because it is advantageous to generate more than one types of measurement graphics without invoking a menu outside of the medical image or outside of the graphics user interface (Fenster column 23 and Fig. 27).

Motivation Analysis for incorporating Stockham into Echerer and Fenster:

It would have been obvious to one of ordinary skill in the art to have incorporated the Stockham's measurement method into Echerer and Fenster's method of processing cursored user interaction for the reasons given below. Echerer discloses enabling the generation of at least three different measurement graphics without requiring a user to define a type of graphic being generated through the automatic analysis file wherein the measurement graphics is automatically generated (See column 19-24). Echerer's generation of the at least three different measurement graphics is enabled without moving the cursor outside the medical image, i.e., through the automatic analysis file. Therefore, Echerer suggests the claim limitation of "enabling the generation of at least three different measurement graphics based only upon actuation of said at least one button of said mouse when said pointer symbol is situated on said medical image such that the measurement graphics are generated without movement of said pointer symbol outside of said medical image." Echerer's generation of the at least three different measurement graphics is performed through the automatic analysis file without requiring a user clicking on the

menus, toolbars and control menus to define in advance the type of measurement graphic being generated.

Therefore, having the combined teaching of Echerer, Fenster and Stockham, one of the ordinary skill in the art realize how to generate at least three different measurement graphics based only upon the actuation of the at least one button of the mouse on the medical image. One having the ordinary skill in the art would have been motivated to do this because it would have advantageously provided more than two types of measurement graphics being generated without the use of the menu (Fenster column 23 and Fig. 27; Stockham column 6, lines 1-5 and Figs. 1a-3c).

Finally, the responses to the arguments (A)-(G) can be combined to provide the rationale of rejection to the claims 1 and 10 and similar claims.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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